

Patent Claims

1. Method for producing a protective layer against oxidation and/or corrosion on components, in particular on components of gas turbine, characterized by the following steps:
 - a) providing a component (10) with at least one substrate surface (13, 14) and a substrate composition,
 - b) providing a coating material (18), said coating material (18) containing at least platinum (Pt) and aluminum (Al),
 - c) depositing the coating material (18) consisting of at least platinum (Pt) and aluminum (Al) on the component (10) to be coated in a PVD process (physical vapor deposition process).
2. Method according to Claim 1, characterized in that a component (10) having a substrate composition comprised of a nickel-based alloy or a cobalt-based alloy is provided.
3. Method according to Claim 1 or 2, characterized in that a coating material (18) is supplied as a so-called target for the PVD process, where the coating material (18) also contains nickel (Ni) in addition to platinum (Pt) and aluminum (Al).
4. Method according to Claim 3, characterized in that the coating material (18) additionally contains cobalt (Co).
5. Method according to Claim 3 or 4, characterized in that the coating material (18) additionally contains yttrium (Y) and/or hafnium (Hf) and/or silicon (Si).
6. Method according to any one or more of Claims 1 through 5, characterized in that the platinum (Pt) and the aluminum (Al) are deposited jointly in a single PVD process on the component (10) that is to be coated.

7. Method according to any one or more of Claims 1 through 6, characterized in that cathode atomization (sputtering) is used as the PVD process.
8. Method according to Claim 7, characterized in that the cathode atomization is performed in a vacuum chamber (15) under a protective gas atmosphere, preferably using argon and/or krypton as the protective gas and/or process gas.
9. Method according to any one or more of Claims 1 through 8, characterized in that the coated component (10) is subjected to a heat treatment following the PVD process.
10. Method according to any one or more of Claims 1 through 9, characterized in that the coated component (10) is mechanically blasted following the PVD process.
11. Method according to any one or more of Claims 1 through 10, characterized in that the component (10) to be coated is mechanically blasted before the PVD process.
12. Method according to any one or more of Claims 1 through 11, characterized in that the composition of the coating material (18) is adapted to the component (10) to be coated on the one hand and on the other hand to the desired protective layer to be produced.
13. Protective layer against oxidation and/or corrosion for components, in particular components of a gas turbine, where the protective layer is formed by coating a component (10) with at least platinum (Pt) and aluminum (Al) and thereby forming a substrate on the component as the protective layer, additionally containing at least platinum (Pt) and aluminum (Al) in addition to the components of the substrate composition of the component (10), characterized in that the protective layer is produced by a method according to any one or more of Claims

1 through 12.

14. Use of a protective layer according to Claim 13 as a corrosion preventing layer.
15. Use of a protective layer according to Claim 13 as a hot gas corrosion preventing layer.
16. Component having an platinum-aluminum protective layer, in particular a component of a gas turbine having at least one substrate surface (13, 14) and a substrate composition of the component (10) and having a substrate area which acts as a protective layer and is formed in the area of the or each substrate surface (13, 14) of the component (10) by coating with at least platinum (Pt) and aluminum (Al), containing the components of the substrate composition plus in addition at least platinum (Pt) and aluminum (Al), characterized in that the protective layer is produced by a method according to any one or more of Claims 1 through 12.
17. Component according to Claim 16, characterized in that it is designed as a blade or a blade segment of a gas turbine, in particular an aircraft engine.